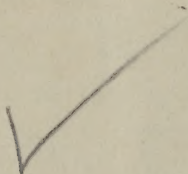


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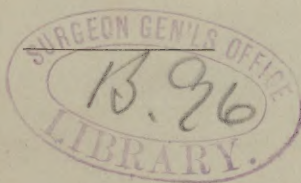
RATIONAL TREATMENT OF DYSENTERY.

BY



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RATIONAL TREATMENT OF DYSENTERY.

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Dysentery was formerly much more frequent and formidable than at present in our state. Those of us whose professional life overlooks a period of twenty-five or thirty years, remember the days of anxious vigil and work in the management of cases of this disease, which, let us hope, the young practitioners of to-day will never know. In the "good days of old," when every land owner in Indiana "raised" his own malaria, with a good surplus for export if need be, the occurrence of dysentery in an epidemic form was by no means unusual; and sporadic cases were always to be expected. Free and general admission of sunlight to the earth's surface, improved drainage, a more general appreciation and understanding of personal and public hygiene, an increased enlightenment of the professional mind in all matters relating to its prevention and cure, have gone far towards eliminating dysentery from the list of even endemic diseases. Still it occasionally occurs even in districts not usually regarded as malarial, and it not unfrequently presents itself in such shape as to require the wisest and most careful management. It fell to my lot to see such a case in August, 1877, in consultation with my friend Dr. Keen, by whose permission I shall use it as a text for whatever I may have to say about dysentery.

The patient was a young man aged about eighteen years, previously stout, healthy and of a good constitution, with no tendency whatever to bowel derangements. The season had been remarkably free from malarial diseases, although the

weather immediately preceding the date of the attack had been quite hot and sultry. He had been, with some companions, "roughing it" on and about Pine lake, sleeping in a tent during the nights. On the ninth of August, immediately after breaking camp and returning home, he was seized with a chill followed by fever, diarrhea and speedily thereafter by dysentery. A daily record was not kept, but the fever was very slight; the tongue throughout the attack was moist, clean and somewhat pointed when protruded; and the liver, stomach and small intestines performed their functions quite satisfactorily. The entire force of the disease seemed concentrated upon the large intestines. The calls to stool were rarely as far as twenty minutes apart; there was great tormina, followed by straining, severe and constant and unendurable tenesmus. The discharges consisted almost wholly of the *lotura carniū*, of Stoll, or the "scrapings of the gut," of our ancestors, always regarded as of the worst possible augury, alternated occasionally with lumps of a bloody albuminoid jelly. At an early stage of the treatment, the bowels had been well emptied of ^{the} fecal contents, by the judicious use of salines and mercurials. The attempt had then been made to relieve the pain and lessen the exhaustive discharge, by the use of opiates and astringents, both by the stomach and rectum, without appreciable results. It was decided to continue the same general line of treatment, increasing the doses and varying somewhat the form of administration. For the next four days the situation was substantially unchanged, such changes as there were, being for the worse. The stomach began to yield either to the force of the disease or the effect of the remedies directed to its cure. There was less of recently coagulated exudate, but there was also much more pus, and the increased feter of the discharges, and other symptoms, too clearly pointed to a fatal issue. Opium, pushed to the verge of tolerance and safety, had failed to relieve the pain, and astringents, both vegetable and mineral, had been equally ineffectual to control the muc^os and bloody flux. The treatment which seemed so useless was abandoned, and six and a half decigrams of salicine were given every two hours and ^{with} every alternate dose, commencing with the first, was administered with two grams

fluid extract of ergot. But three doses of the salicine were borne by the stomach. But the ergot being well borne, was continued at intervals of three or four hours, as long as the discharges indicated its necessity. Although the prescription was made with a good deal of faith in its appropriateness, the result far surpassed our expectations; the tormina, tenesmus and discharges so speedily ceasing as to leave no room for doubt as to the agency of the remedies used. The convalescence was steady, though protracted, because of the pathological changes in the large intestines and the functional disturbances of the stomach and kidneys, remaining after the violence of the disease had subsided.

Dysentery is placed in our revised army table, following the English nomenclature, in the class of zymotic diseases; order, miasmatic. That it is the result of a specific poison is fully accepted by thus placing it with typhus, typhoid and yellow fevers, small-pox, measles and the like. It is defined by Aitken as "a specific febrile disease, accompanied by tormina, followed by straining or scanty mucous or bloody stools, which contain little or no fecal matter. The minute lenticular and tubular glands of the mucous membrane of the large intestines, with the intertubular connective tissue, are the chief seats of the local lesion, which sometimes extends into the small intestine beyond the ileo-colic valve; as in cases in which scorbutus is a predisposing cause." It may be fairly assumed, that whilst the etiology of dysentery is not yet fully understood, its family relation may be regarded as definitely settled. According to Aitken, "there are strong grounds for believing that there is something specific in the nature of the poison which produces dysentery, just as specific as that of small-pox, typhus fever, typhoid fever, yellow fever, scarlatina, ague or diphtheria." This opinion is not accepted by Heubner, author of article on dysentery in Ziemssen's *Cyclopedia*. He says, "the dysenteric process is not, from an anatomical point of view, a specific affection." This dictum is, however, modified in the next paragraph, thus: "Nevertheless, in many cases, dysentery can not be regarded as a simple inflammation, because the development and propagation of epidemic dysentery show that the irritative causes which give rise to this particular inflammation are developed only under certain

conditions, and hence may be considered specific—we see that great numbers of men are made sick in exactly the same way, are infected.” On the next page, after describing the localities and conditions peculiarly favorable to the production of this disease, he says: “It must then be that there is something peculiar in tropical climates favorable to the production of dysentery, and one can not but suggest that the long continued high temperature of the air and ground, on the one hand, favors the organic process which is the source of the dysentery poison, and on the other, affects the human organism injuriously, making it in some way sensitive to infection.” In view of this concession, it is difficult to see how he can assert, as *ex cathedra*, that “the parasitic theory of Linnæus, who considered dysentery to be itch of the intestines, had to be given up long ago.” Neither can this dictum be accepted as final when so recent and great an authority as Wagner says in his “Pathology,” “that micrococci have anything to do with the inflammation, I will not venture to affirm or deny.” And so we have, as so often the result of ponderous German scholarship, nothing but an intelligent skepticism.

Dysentery is the product of high temperature and moisture. It has this origin in common with many other infectious diseases, but the co-existence of these conditions are not invariably or even usually productive of either dysentery or any of its congeners. It is a malarial disease, but many highly malarial regions are rarely or never visited with dysentery, and it is absent in many seasons of extraordinary malarial activity. It is an infectious disease, yet comparatively few of those subjected to the infection are subjects of its power. It is almost purely a local disease, the constitutional disturbances being surprisingly few and trivial, and yet the pathological changes which it is capable of producing are always grave and are often fatal in their character.

As “in Italy all roads lead to Rome,” so in our country, all medical inquiry leads us sooner or later to MALARIA. Its “name is legion, for it is many.” Whilst it must be confessed that we have not yet been furnished with a satisfactory definition of it, I think its *composite* character will be eventually established. The “germ theory” of many of the infectious diseases has not

been without its advocates since the days of Linnæus until now. The stone which old builders rejected with scorn is about to be laid as the corner stone of the new pathology. Passing with the merest mention the names and labors of Professors Salisbury, of Ohio, Lynzi, of Rome, Balaestra, of Paris, Eichwald, of St. Petersburg, Richardson, of Philadelphia,¹ etc., some of them relating directly to organisms found in dysenteric discharges, I will only briefly refer to the observations of Professor Tyndall upon the ultra-microscopic organism naturally present in ordinary atmospheric air. It will be remembered that in his lectures on light he has demonstrated,

1. That the air is at all times, even when free from microscopically visible particles, pervaded with particles not separable by the highest power of the microscope, and yet clearly discernible by the peculiar opalescence which they communicate, under certain conditions, to the beam of solar or electric light;

2. That this opalescence disappears when the air is allowed to remain absolutely tranquil;

3. That air from which these minute particles have subsided, is no longer capable of contaminating liquids, although abundantly capable of doing so before such separation. The doctrine claimed, as fairly deduced from those experiments is, that the germs which are most potential in modifying the vital forces, are ultra-microscopical and not amenable to classification by any methods at present available. It is claimed as probable that each of those diseases now known under the generic title of zymotic—and it is perhaps true of many another not thus classified—is the product of one or the other of these germs. Shakspeare saw this, “as in a glass darkly,” when he described in Hamlet—

“The leprous distillment whose effect
Holds such an enmity with blood of man,
That swift as quicksilver it courses through
The natural gates and alleys of the body,
And with a sudden vigor it doth posset
And curd, like eager droppings into milk,
The thin and wholesome blood.”

—HAMLET, ACT I, SC. V.

(1) In order to keep this paper within the prescribed limits, reference is made, without further particularization, to the many widely scattered but highly suggestive facts bearing upon this point, to be found in the medical literature of the past decade. The whole question is now fairly *sub judice*, but much more extended and careful observation than has yet been accorded will be necessary to designate, with scientific accuracy, the effect, if any, of microscopic and even smaller organisms, upon any or all the zymoses.

Whether each disease has its special germ, thus constituting in the microscopical and ultra-microscopical organisms, a classification corresponding to our nosology can not just now be properly affirmed; but I do believe that the near future will reveal, in the direction indicated, a much more precise knowledge of the disease, its cause and cure, than is now generally deemed possible.

As opposed to the spore and germ theory of disease, we have the chemical theory of contagion, which is not without intelligent adherents; but it will receive no more extended notice here, neither will I occupy the time of the society with any further reference to the pathology of dysentery, except to recall the fact that it is primarily a *local* disease confined to the large intestines, specific in its nature and—Dr. Flint notwithstanding—of a fatal tendency. With slight fever, without appreciable disturbance of liver, stomach, kidneys, lungs or skin; with brain and nervous system intact, an inflammation of the mucous coat of the rectum and colon may rapidly be succeeded by ulceration, sphacelus and death.

If this view of the origin of infectious diseases be correct, the way to a rational treatment becomes quite apparent. The indications are, 1, the removal, or, this failing, 2, the destruction of the offending organisms; and, 3, the antagonism of their results by means chiefly hygienic. In the case of dysentery, the first indication is best met by the use of such evacuants as act promptly, thoroughly, yet kindly, upon the intestinal tract. Such are cathartic doses of calomel, the neutral salts and castor oil, given by the mouth, or large enemata of water, cold or warm, according to the state of the patient as manifested by his feelings, but sufficient in quantity to completely fill the large intestine, including the cecum. The possibility of making fluids penetrate the whole length of the large intestine, and beyond even, has long been known; but its use has, until recently, been confined to the removal of scybala from the cecal pouches. It has been of late very greatly extended, and with very excellent results, for the relief of dysentery among other uses. The Davidson syringe is an excellent contrivance, but the fountain syringe, or in the

absence of this an india-rubber tube, attached to an ordinary nozzle and fed by means of a funnel, is an improvement. By this arrangement the pressure can be moderated as necessary and the best possible results procured. Owing to the low vitality of these organisms, the probabilities are, that by the judicious use of these means at a sufficiently early state, an ordinary attack of dysentery may be abated—*sublatâ causâ, tollitur effectus*—leaving nothing for subsequent treatment except, possibly, a mild opiate or two, rest and other hygienic conditions, to a successful convalescence.

It is not often, however, that the physician has so even a start with the materies morbi, and parasitocides are required to meet the second indication. Fortunately there are many remedies destructive of these low organisms, which are at the same time innocuous to the mucous tissues. Some of these remedies may be best introduced by enemata, and others by way of the stomach. Of the former we have

Sulph. copper (grams, .65 to 1.29 in half liter of water).

Salicylic acid (1 part to 300).

Nitrate of silver (grams, .065 to .13 in 32 grams of water).

Iodine (grams, .32 to 32 grams of water).

Of the latter we have ipecac, salicine and its congeners, quinine, ergot, the alkaline sulphites, etc. These will be briefly discussed in the order given.

For more than two hundred years ipecac has been regarded as the great anti-dysenteric remedy in the region of its production. The method of using it there is to administer from two to four grams of the powder in a little sweetened water in the morning, the patient remaining quietly in bed and avoiding the ingestion of fluids, which would excite vomiting. Night and morning an enema of the infusion of the bruised root is given. The remedy is thus administered every day for three or four days, when copious bilious catharsis is usually produced. If this effect does not occur, a dose of castor oil is given, followed when the evacuation has been sufficient, by mild opiates and astringents. The experience of such of the surgeons in the United States army as used this treatment during the war of

the Rebellion, coincided with that which, in Peru, procured for ipecac, more than a century ago, the name radix anti-dysenterica. This treatment has had its greatest triumphs in India and China, reducing the mortality from seven per cent., as it was under the mercurial treatment, to 1.3 per cent., according to Dr. Cornish, as quoted by Professor Maclean. One word here regarding the place of calomel or other mercurial in the treatment of dysentery. *It should have no place at all, except, and that very rarely, as an evacuant at an early stage.* In its so-called alterative doses, it may happen sometimes to be useful by the conversion of a portion of the mild into a corrosive-chloride, and so act as a destroyer of organisms; but it is not wise to risk its constitutional effects for the slight good it may, in a hap-hazard way, accomplish in this regard. It should also be remembered that we can never be sure of the strength or idiosyncrasies of our patient. Especially mischievous might mercury become in adynamic complications in scorbutic conditions, in the splenic cachexia and in anemia or in the rheumatic diathesis.

At the head of the class of anti-ferments, just now undoubtedly stands salicylic acid, and it should theoretically act promptly and favorably in any stage of dysentery characterized by the presence of germs. "It acts," says Binz, in his 'Elements of Therapeutics,' "as a poison on many forms of protoplasm by considerably reducing their power to absorb oxygen. Even in small doses it checks a variety of processes which depend upon decomposition. Like quinia, it does not interfere with the normal ferments of the organism itself." Therapeutically, salicylate of sodium resembles the free acid, but is more pleasant to take and more readily absorbed. It has a stronger action on certain forms of bacteria than carbolic acid, quinia, boracic acid and alcohol, and one which is scarcely one-third less powerful than that of free salicylic acid. Salicin is decomposed by certain ferments; for example, saliva with the absorption of water, into saligenin and sugar, the former of which is afterwards readily oxidized into salicylic acid. "The conditions for both these processes exist within the body." Should further investigations verify these statements, although not now classed

among anti-dysenterics, I think we hazard little in expressing the opinion that these medicines soon will be."

Some sixteen years ago, Dr. Polli, of Italy, introduced the alkaline sulphites, especially the sodium hypo-sulphite, as possessing extraordinary powers in the arrest of the various abnormal ferments, and especially the destruction of the microscopic fungi which were supposed to produce typhoid fever. Other low febrile and malignant diseases, purulent infections and the contagium of various exanthems were included in the range of the beneficial influences claimed for the sulphites. If these claims are verified, it would seem quite probable that dysentery might be favorably affected by them. I do not just now recall any instances in which they have been thus used. Dr. Gazzo, of Louisiana, reports great success in the treatment of an epidemic dysentery, with a mixture of sodium sulphite, salicylic acid and tincture of opium. Granting the greatest possible success to this mixture, opinions would doubtless differ as to the agency of its various constituents.

Ergot is one of those medicines that can scarcely be classified. The destructive energy with which it attacks all the soft tissues of the extremities, when given in large and long-continued doses, producing "gangrenous ergotism," and that peculiar condition of the nervous system, known as "convulsive ergotism," serve to place it among the organic poisons. In medicinal doses it possesses the power of acting directly upon involuntary or unstriated muscular fibre, producing powerful and persistent contractions. It is seen by the ophthalmoscope to cause a marked contraction also of the capillaries, and the same result is visible in the frog's foot by the aid of the microscope. Ergot might then be confidently expected to be useful in the treatment of dysentery, in virtue of its three-fold power to destroy organisms; to constrict the involuntary muscular fibre of the large intestines, and, by lessening the calibre of the intestinal capillaries, to directly affect the inflammatory process.

Reference has been had all along in this discussion to dysentery *pure and simple*. It is hardly necessary in this presence to insist upon the necessity of an accurate diagnosis. A course of treatment exactly adapted to a case of dysentery would fail if

applied to a case of ulcer of the rectum or fissure of the anus, accompanied by dysenteric symptoms. A simple colitis or proctitis would receive no benefit from medicines adapted to the destruction of germs. Neither should it be forgotten that we have often, either accompanying or succeeding dysentery, biliary derangements, splenic infarctions and all the phenomena of the various diathesis to look after. There is the same necessity to be met of a careful management of the period of convalescence. Pure air and water, nutritious food, suitable clothing, good nursing and a careful observance of all hygienic demands are as essential as they ever were. What Fothergill calls "systemic impairment from bad environment" must be prevented by a ceaseless vigilance.

In conclusion, it should be noted that notwithstanding the recent brilliant discoveries in the pathology and therapeutics of this class of diseases, the fact remains that each case is a separate problem, with conditions and necessities of its own, and that no easy method has yet been discovered which will relieve the practitioner from the exercise of his ripest scholarship, and the clearest intellection of which he may be capable.

